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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,889	09/12/2003	Mohamad El-Batal	LSI.76US01 (03-1070)	6947
24319	7590	10/26/2005	EXAMINER	
LSI LOGIC CORPORATION 1621 BARBER LANE MS: D-106 MILPITAS, CA 95035			DATSKOVSKIY, MICHAEL V	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/660,889

Applicant(s)

EL-BATAL ET AL.

Examiner

Michael V. Datskovskiy

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see Remarks, filed 10/13/2005, with respect to rejection of claims 1, 9, 12, 14-15 and 28 under 35 § 102 (e) over Curtis et al have been fully considered and are persuasive. This rejection has been withdrawn.

Applicant's arguments with respect to rejection of claims 14 and 28 under 35 § 112 first paragraph have been fully considered but they are not persuasive. Disregarding to the structure shown in Fig. 2, claim 1 comprises a structural limitation that a storage system with multiple disk drives comprising: "...a plurality of disk drives having an elongated rectangular prismatic shape comprising two large faces: and two small faces, one of said two large faces oriented perpendicularly to said backplane..." and claim 15 comprises a method step of providing a storage system with multiple disk drives comprising: "...a plurality of disk drives having an elongated rectangular prismatic shape comprising two large faces: and two small faces, one of said two small faces oriented parallel to said backplane...", (underlined by examiner), which makes dependent claims 14 and 28 contradictive respectively to their parent claims 1 and 15.

2. Applicant's arguments with respect to rejection of claims 1, 9, 12, 14-15 and 28 under 35 § 102 (e) over Malcolm et al have been fully considered but they are not persuasive. First: Frame appears only in claims 10 and 24. Second: Although said frame looks different in the disclosure of the current application, the way it was claimed does not distinguish the claimed structure or method from the device disclosed by Malcolm et al. Therefore, the previous rejection over Malcolm et al stays.

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2. Applicant's arguments with respect to rejection of claims 1-4, 6-8, 10-11, 13, 15-18, 20-22, 24-25 and 27 under 35 § 102 (e) over Malcolm et al have been fully considered but they are not persuasive. First: Frame appears only in claims 10 and 24. Second: Although said frame looks different in the disclosure of the current application, the way it was claimed does not distinguish the claimed structure or method from the

Art Unit: 2835

device disclosed by Malcolm et al. Therefore, the previous rejection over Malcolm et al stays.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 14 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 14 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: Claim 14 and 15 each claims that hard disks are oriented such that one of small faces is perpendicular to the backplane, which makes them contradictory respectively to their parent claims 1 and 15.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 2835

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 6-8, 10-11, 13-18, 20-22, 24-28 as best understood by examiner, are rejected under 35 U.S.C. 102(e) as being anticipated by Malcolm et al (US Patent Application Publication 2004/0105225 A1).

Malcolm et al teach a rack-mounted storage system, Figs. 1-3b, with multiple disk drives 11, comprising: a rectangular prismatic enclosure 19 with six substantially planar sides having at least two largest sides 17, 18, a primary access side 26 and an input/output side 20, said primary access side 26 not being one of said largest sides 17, 18 and said input/output side 20 being opposite of and substantially parallel to said primary access side 26; a back plane 12 oriented parallel to said at least one of said two largest sides, said backplane 12 having a plurality of disk drive interface connectors 14 and at least one interface connector 15; a plurality of 2.5 inch factor disk drives 11 having an elongated rectangular prismatic shape mounting frame comprising two large faces and two small faces, one of said two large faces oriented perpendicularly to said backplane 12, each of said disk drives having a connector 13 plugged in one of said connectors 14; and said backplane 12 with said plurality of disk drives 11 being slidably engaged into an interface connector 23 and adapted to be removed from said enclosure through said access side as a single unit. Malcolm et al teach furthermore: Said storage system further comprises an interface mechanism engaged to said interface connector 23 and capable for transferring signals from said interface connector 23 to at least one input/output connector accessible from said input/output side 20, (see paragraph [0012]); Said storage system further comprising at least one fan capable of causing air

Art Unit: 2835

to flow from said primary access side to said input/output side (or in opposite direction, which inherently depends on the direction of rotation of the fan), see paragraphs [0004], [0005] and [0013]. Malcolm et al teach furthermore said storage system further comprising a frame 10 onto which are mounted said backplane 12 and said plurality of disk drives, said frame adapted to be slidably inserted onto said enclosure from said access side 26 (see paragraph [0038] and claim 3, last two lines). Regarding to the claims 12 and 26: Malcolm et al teach a rack mounted enclosure 19, which inherently could be used as a free standing unit. Regarding to the claims 14 and 28: Even if independent claims 1 and 15 and dependent claims 14 and 28 would be rewritten to avoid provided above rejection under 35 U.S.C. 112, second paragraph, it is inherent that a difference between orientations of hard disk drives on the backplane would not make patentable distinction over the prior art of record.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malcolm et al.

Malcolm et al teach all limitations of the claims except said hard disk is 1 inch factor disk drive. It would have been an obvious matter of design choice to install 1 inch factor disk drives, since applicant has not disclosed that the form factor of a disk drive solves any

Art Unit: 2835

stated problem or is for any particular purpose and it appears that the proposed invention would perform equally well with any size of hard disks.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Datskovskiy whose telephone number is (571) 272-2040. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2835

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael V Datskovskiy  
Primary Examiner  
Art Unit 2835

10/21/2005